



## California Energy Commission

### NEW STANDARDS EFFECTIVE JULY 1

The amendments to the **Energy Efficiency Standards** become effective for permit applications made after July 1, 1995. An overview of the amendments is contained in **Blueprint** No. 49, Summer 1994.

The 1995 edition of the **Energy Efficiency Standards** (Parts 1 and 6) is being mailed directly to all people on the **Standards** and **Blueprint** mailing lists. You may also obtain a copy of the amendments to Parts 1 and 6, with underlines indicating new text and strikeout indicating deleted text, by calling the Energy Hotline.

### COMPUTER PROGRAMS

The following versions of certified programs are approved for demonstrating compliance with the 1995 standards.

#### Residential

CALRES 2, version 1.31  
MICROPAS, versions 4.0, 4.01, 4.02  
COMPLY24, versions 4.10, 4.11, 4.20  
REA (formerly EASYCALC)  
NRG-24 (not available to the public)

#### Nonresidential

COMPLY 24, versions 4.11 and 4.20

### 1995 COMPLIANCE MANUALS

**Residential Manual** , P400-95-002, \$35  
**Nonresidential Manual** , P400-95-005, \$30

See back page for Publications Office address.

### COMPLIANCE AND ENFORCEMENT

The California Energy Commission kept changes to the standards minimal to focus on improving compliance. To move in this direction, language in the **Administrative Regulations** was strengthened.

- **Signatures (Certificate of Compliance)**

The person responsible for project design is also responsible for standards compliance. Documentation preparers are responsible for the accuracy of the compliance documentation.

- **Revised compliance** . If changes made during construction might affect compliance, calculations must be redone to show that the building is still in compliance.

- **Installation Certificate** . The installation certificate for residential buildings (CF-6R) includes fenestration and must be provided at the time of inspection for each device. The signature block for each type of device must be signed by either the licensed installer (or authorized by a licensed contractor) or the general contractor.

- **Builder's responsibility** . Builders must provide copies of key compliance forms to the original occupants of a building. Also, operating and maintenance information, such as a copy of a home energy manual (either the Energy Commission version or a similar publication), must be provided for residential buildings.

- **1,000 ft<sup>2</sup> exemption** . The exception which building departments may grant for small nonresidential buildings was reworded

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showing that the exemption is for documentation (a signed statement of compliance is required) and is allowed only when the entire building (including conditioned and unconditioned spaces) is less than 1,000 square feet.

The changes are meant to improve compliance by increasing awareness of each party's accountability in the construction process.

## RESIDENTIAL STANDARDS

### Questions and Answers

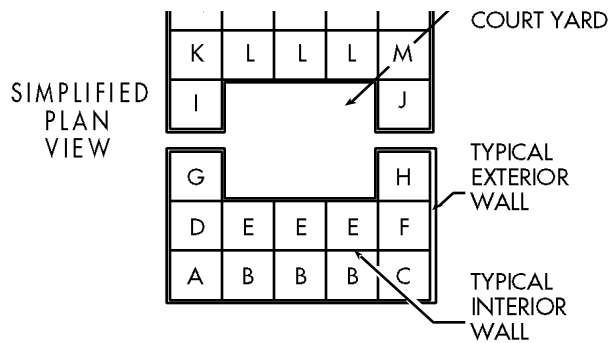
**Q** *When preparing compliance calculations for a three-story apartment complex, I have the option of showing compliance for each dwelling unit or for the entire building. If I use the individual dwelling unit approach, do I need to provide calculations for every dwelling unit?*

Each dwelling unit must comply with the standards when using this approach. Only when dwelling units have identical conditions can the calculations be combined. This means you will show separate compliance for all unique conditions, such as:

- Front facing North
- Front facing West
- Front/side walls facing East and North
- Front/side walls facing East and South
- Exterior roof, no exterior floor
- Exterior floor, no exterior roof

Surfaces which separate two conditioned spaces (such as common walls) have no heat transfer and can be disregarded in the compliance calculations.

The following diagram can be likened to a plan view and shows, with letter designations, which units are identical. In this example, there will be 16 separate sets of compliance calculations for this floor alone. Each floor of the building would be treated separately.



Alternatively, you can model the entire building. In this example, you would show compliance for each of the two buildings.

**Q** *I've seen a unique type of wall construction assembly which consists of both concrete and framing. How do I determine if this wall, or other unique construction assemblies, are "framed walls" which require wall insulation to meet the mandatory requirement (Energy Efficiency Standards, Section 150(c))?*

If the wall is an exterior partition, first determine if it has structural members (studs or hat channels) spaced not more than 32 inches on center (Section 101(b)). Second, determine whether the framing is supporting the load of the building. If both of these criteria are met, the wall is framed and must meet mandatory wall insulation requirements.

## NONRESIDENTIAL STANDARDS

### Questions and Answers

**Q** *What are the new occupancy groups from the 1994 Uniform Building Code? And how are compliance calculations affected?*

The scope of the 1995 **Energy Efficiency Standards** (Section 100) is occupancy groups **A, B, E, F, H, M, R** and **S**. A summary of these occupancy groups [changes did not affect residential occupancies] is:

- A** An assembly room with an occupant load of 300 or more, including buildings used for educational purposes which are not Group **E** or **B**.

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- B** Office, professional or service-type transactions; storage of records and accounts; and eating and drinking establishments with an occupant load of less than 50.
- E** Buildings used for education purposes through the 12th grade; any building or portion of a building used for day-care purposes for more than six persons.
- F** Factory and industrial facilities involving low and moderate-hazard materials.
- H** Buildings with specified quantities of materials which present a fire or explosion hazard; repair garages and aircraft repair hangars not classified as Group **S**, and heliports.
- M** Merchandise display and sales.
- S** Storage of low and moderate-hazard materials; repair garages without open flame or welding; parking garages.

Buildings of these occupancy groups which meet the other criteria for being within the scope of the Standards (permitted, conditioned space) must comply with the nonresidential standards.

**Q** *How are process loads handled in the computer compliance approach? Do they result in a credit? For example, a small office building with substantial glazing, 6 Watts/ft<sup>2</sup> of lighting and a 120,000 Btuh cooling load, is claiming a process load of 15 Watt/ft<sup>2</sup>. Their total cooling capacity is 199,000.*

There is no credit for process loads. The reference building (standard design) will have the same process loads as the proposed building. The applicant must, however, justify the amount of the process loads. If the cooling load, including the process loads, is 199,000 Btuh, this capacity is compared with the capacity of the HVAC unit for the reference building which includes the process load +21%. (*Energy Efficiency Standards*, Section 144(b); *Nonresidential Manual*, Section 4.2.2; *Alternative Calculation Methods Manual* (April 1992), pp. 32 and 62.)

**Q** *In calculating lighting compliance, how is the wattage for incandescent fixtures determined?*

lamp wattage or 75 percent of the maximum wattage rating of the fixture.

**Q** *When preparing lighting compliance calculations, Section 146(a)3.D. of the Energy Efficiency Standards indicates that I do not have to include wattage from "specialized local lighting installed in non-lighting equipment by its manufacturer." What are some examples of equipment types which can be excluded?*

Examples of lighting wattage which can be excluded from total wattage calculations include:

- Lighted signs (if they are not hardwired)
- Walk-in freezers
- Cabinetry that is not movable and not used for display purposes with built-in lights
- Food dispensing machines
- Drink dispensing machines
- Industrial equipment such as that used by manufacturing facilities (drill press, sewing machines, etc.)
- Refrigerators or coolers including walk-in refrigerators or coolers

**Q** *Is a light fixture in a site built walk-in refrigerator or cooler excluded from the lighting wattage calculations?*

If the space is maintained at a temperature of less than 55°F, it is outside the scope of the standards and energy compliance is not required for the space occupied by the site built walk-in unit. (See "directly conditioned space," Section 101(b).)

**Q** *If the lighting is excluded for refrigerated display cases or walk-in refrigerators, should the floor area occupied by these units be excluded from the lighting calculations?*

Since it is part of the conditioned space, the floor area occupied by refrigerated display cases is included as floor area for the lighting calculations. (This is similar to "gross sales area" which includes areas associated with the display and sale of merchandise.) Walk-in

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refrigerators or freezers, however, are enclosed, unconditioned space and the floor area associated with them is not included as floor area in the energy compliance calculations.

**Q Is a light fixture under a restaurant exhaust hood built over a stove or grill exempt from lighting wattage calculations?**

If the light is installed in the exhaust hood by the manufacturer, it can be excluded (**Energy Efficiency Standards**, Section 146(a)3.D.). Otherwise, the lighting is not “integral to food preparation equipment” and must be included in the lighting calculations.

## DID YOU KNOW?

••• A revised **Blueprint** index with this issue includes questions applicable to 1992 and 1995 standards. Answers from issues prior to No. 41 which are still applicable to the 1995 standards are included in the appendix of the 1995 **Residential** and **Nonresidential** manuals. Until questions with incorrect or erroneous information (as indicated on the index) are updated, questions can be directed to the Energy Hotline.

••• The new residential forms, CF-6R and IC-1 (July 1995), are included with this issue of **Blueprint**.

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(800) 772-3300 or  
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1 p.m. - 3 p.m.

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